

IN THE CLAIMS

Kindly replace the prior claims listing by the following listing:

1-30. (cancelled)

31. (currently amended): A metal complex compound of formula (1a)



wherein Me is manganese which is present in oxidation state II, III, IV or V, or, titanium, iron, which is present in oxidation state II, III or IV, cobalt, nickel or copper,

X is a coordinating or bridging radical,

n and m are each independently of the other an integer having a value of from 1 to 8,

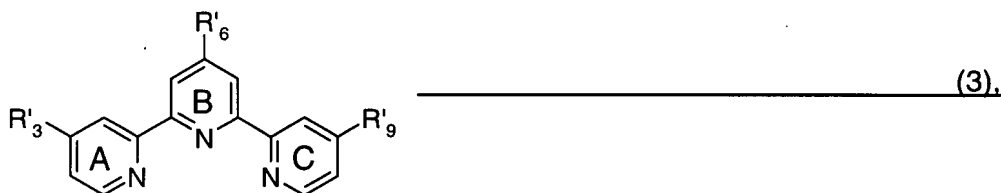
p is an integer having a value from 0 to 32,

z is the charge of the metal complex,

Y is a counter-ion,

q = z/(charge Y), and

ligand L is a compound of formula (3)



wherein

R'6 is cyano; halogen; nitro; -COOR₁₂ or -SO₃R₁₂; -SR₁₃; -SO₂R₁₃ or -OR₁₃; -NR₁₄R₁₅; -

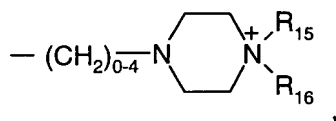
N[⊕]R₁₄R₁₅R₁₆; -N(R₁₃)-(CH₂)₁₋₆-NR₁₄R₁₅; -N(R₁₃)-(CH₂)₁₋₆-N[⊕]R₁₄R₁₅R₁₆;

-N(R₁₃)-N-R₁₄R₁₅ or -N(R₁₃)-N[⊕]R₁₄R₁₅R₁₆, wherein

R₁₂ is in each case hydrogen, a cation, C₁-C₁₂alkyl, or phenyl unsubstituted or substituted by C₁-C₄alkyl, C₁-C₄alkoxy, halogen, cyano, nitro, carboxyl, sulfo, hydroxyl, amino, N-mono- or N,N-di-C₁-C₄alkylamino unsubstituted or substituted by hydroxy in the alkyl moiety, N-phenylamino, N-naphthylamino, where the amino groups may be quaternized, phenyl, phenoxy or by naphthoxy;

R₁₃ is in each case hydrogen, C₁-C₁₂alkyl, or phenyl unsubstituted or substituted as indicated above;

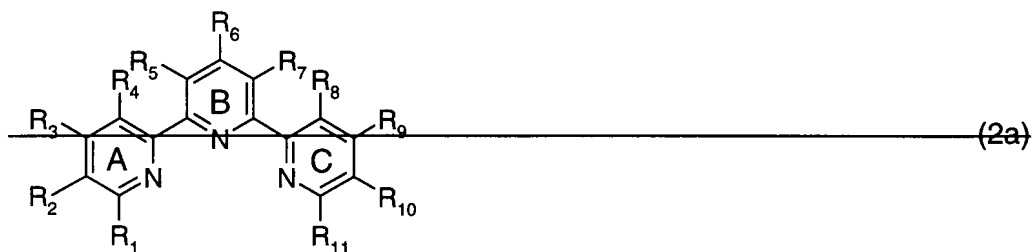
and R₁₄, R₁₅ and R₁₆ are each independently of the other(s) hydrogen, unsubstituted or hydroxyl-substituted C₁-C₁₂alkyl, or phenyl unsubstituted or substituted as indicated above, or R₁₄ and R₁₅ together with the nitrogen atom bonding them form a pyrrolidine, piperidine, morpholine or azepane ring which is unsubstituted or substituted by at least one unsubstituted C₁-C₄alkyl and/or substituted C₁-C₄alkyl, wherein the nitrogen atom can be quaternized;
or a radical



wherein R₁₅ and R₁₆ are as defined above and the ring may be substituted; and

R'₃ and R'₉ are as defined above for R'₆ or are hydrogen, C₁-C₁₂alkyl, or phenyl unsubstituted or substituted as indicated above.

L is a ligand of formula (2a)



~~wherein-~~

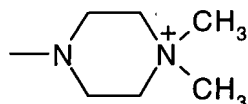
~~R₆ is unsubstituted or substituted C₄-C₄₈alkyl or aryl; cyano; halogen; nitro; -COOR₁₄₂ or -SO₂R₁₄₂;
~~SR₁₄₃, -SO₂R₁₄₃ or -OR₁₄₃; -NR₁₄₄R₁₄₅; (C₄-C₆alkylene)-NR₁₄₄R₁₄₅; -N⁺R₁₄₄R₁₄₅R₁₄₆;
 -(C₄-C₆alkylene)-N⁺R₁₄₄R₁₄₅R₁₄₆; -N(R₁₄₃)-(C₄-C₆alkylene)-NR₁₄₄R₁₄₅; -N[(C₄-C₆alkylene)-NR₁₄₄R₁₄₅]₂;
 -N(R₁₄₃)-(C₄-C₆alkylene)-N⁺R₁₄₄R₁₄₅R₁₄₆; -N[(C₄-C₆alkylene)-N⁺R₁₄₄R₁₄₅R₁₄₆]₂; -N(R₁₄₃)-N-R₁₄₄R₁₄₅ or
 -N(R₁₄₃)-N⁺R₁₄₄R₁₄₅R₁₄₆, wherein R₁₄₂ is in each case hydrogen, a cation or unsubstituted or
 substituted C₄-C₄₈alkyl or aryl;~~~~

~~R₁₄₃ is in each case hydrogen or unsubstituted or substituted C₄-C₄₈alkyl or aryl;~~

~~and R₁₄₄, R₁₄₅ and R₁₄₆ are each independently of the other(s) hydrogen or unsubstituted or
 substituted C₄-C₄₈alkyl or aryl, or R₁₄₄ and R₁₄₅ together with the nitrogen atom bonding them form
 an unsubstituted or substituted 5-, 6- or 7-membered ring which may optionally contain further
 heteroatoms; and~~

~~R₄, R₂, R₃, R₄, R₆, R₇, R₈, R₉, R₁₀ and R₁₁ are each independently of the others as defined above for R₆ or are hydrogen or unsubstituted or substituted aryl,~~
with the proviso that

- (i) at least one of the substituents R₃, R₆ and R₉, R₄, R₁₁ contains a quaternized nitrogen atom which is not directly bonded to one of the three pyridine rings A, B or C and that
- (ii) Y is neither I⁻ nor Cl⁻ in the case that Me is Mn, R₃ and R₉, R₄, R₆ and R₇, R₁₁ are hydrogen and R₆, R₆ is



32-42. (cancelled).

43. (currently amended): A washing, cleaning, disinfecting or bleaching agent, comprising

- I) 0 - 50 % A) of an anionic surfactant and/or B) of a non-ionic surfactant,
- II) 0 - 70 % C) of a builder substance,
- III) 1 - 99 % D) of a peroxide, and
- IV) E) a metal complex compound of formula (1a)(1) as described in claim 46 in an amount which, in the liquor, gives a concentration of 0.5 – 50 mg/litre of liquor when from 0.5 to 20 g/litre of the washing, cleaning, disinfecting and bleaching agent are added to the liquor,

the percentages in each case being percentages by weight, based on the total weight of the agent.

44-45 (cancelled).

46. (currently amended): A method of catalyzing an oxidation reaction which comprises oxidizing a substrate in the presence of a catalytically effective amount of a metal complex compound of formula (1a)(1)



wherein Me is manganese which is present in oxidation state II, III, IV or V, or, titanium, iron which is present in oxidation state II, III or IV, cobalt, nickel or copper,

X is a coordinating or bridging radical,

n and m are each independently of the other an integer having a value of from 1 to 8,

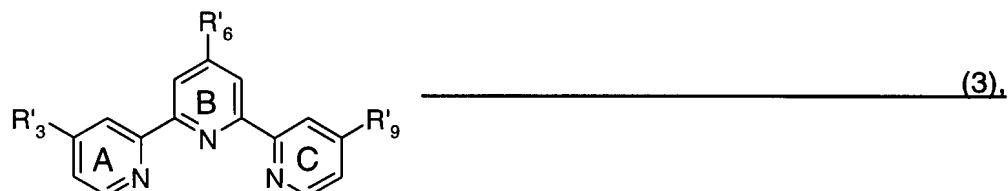
p is an integer having a value of from 0 to 32,

z is the charge of the metal complex,

Y is a counter-ion,

q = z/(charge Y), and

ligand L is a compound of formula (3)



wherein

R'_6 is cyano; halogen; nitro; $-\text{COOR}_{12}$ or $-\text{SO}_3\text{R}_{12}$; $-\text{SR}_{13}$; $-\text{SO}_2\text{R}_{13}$ or $-\text{OR}_{13}$; $-\text{NR}_{14}\text{R}_{15}$;

$\text{N}^+\text{R}_{14}\text{R}_{15}\text{R}_{16}$; $-\text{N}(\text{R}_{13})-(\text{CH}_2)_{1-6}\text{NR}_{14}\text{R}_{15}$; $-\text{N}(\text{R}_{13})-(\text{CH}_2)_{1-6}\text{N}^+\text{R}_{14}\text{R}_{15}\text{R}_{16}$;

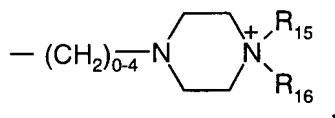
$-\text{N}(\text{R}_{13})-\text{N}-\text{R}_{14}\text{R}_{15}$ or $-\text{N}(\text{R}_{13})-\text{N}^+\text{R}_{14}\text{R}_{15}\text{R}_{16}$, wherein

R_{12} is in each case hydrogen, a cation, $\text{C}_1\text{-C}_{12}$ alkyl, or phenyl unsubstituted or substituted by $\text{C}_1\text{-C}_4$ alkyl, $\text{C}_1\text{-C}_4$ alkoxy, halogen, cyano, nitro, carboxyl, sulfo, hydroxyl, amino, N-mono- or N,N-di- $\text{C}_1\text{-C}_4$ alkylamino unsubstituted or substituted by hydroxy in the alkyl moiety, N-phenylamino, N-naphthylamino, where the amino groups may be quaternized, phenyl, phenoxy or by naphthoxy;

R_{13} is in each case hydrogen, $\text{C}_1\text{-C}_{12}$ alkyl, or phenyl unsubstituted or substituted as indicated above;

and R_{14} , R_{15} and R_{16} are each independently of the other(s) hydrogen, unsubstituted or hydroxyl-substituted $\text{C}_1\text{-C}_{12}$ alkyl, or phenyl unsubstituted or substituted as indicated above, or R_{14} and R_{15} together with the nitrogen atom bonding them form a pyrrolidine, piperidine, morpholine or azepane ring which is unsubstituted or substituted by at least one unsubstituted $\text{C}_1\text{-C}_4$ alkyl and/or substituted $\text{C}_1\text{-C}_4$ alkyl, wherein the nitrogen atom can be quaternized;

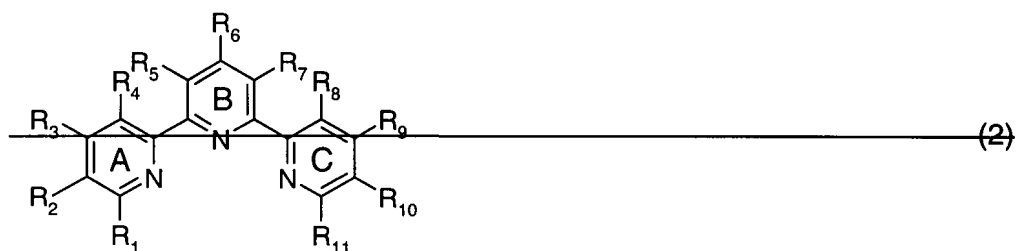
or a radical



wherein R_{15} and R_{16} are as defined above and the ring may be substituted; and

R'₃ and R'₉ are as defined above for R'₆ or are hydrogen, C₁-C₁₂alkyl, or phenyl unsubstituted or substituted as indicated above.

L is a ligand of formula (2)



wherein-

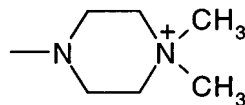
~~R₁, R₂, R₃, R₄, R₅, R₆, R₇, R₈, R₉, R₁₀ and R₁₁ are each independently of the others hydrogen; unsubstituted or substituted C₁-C₁₈alkyl or aryl; cyano; halogen; nitro; COOR₁₂ or SO₂R₁₂; SR₁₃; SO₂R₁₃ or OR₁₃; NR₁₄R₁₅; (C₄-C₆alkylene)NR₁₄R₁₅; N⁺R₁₄R₁₅R₁₆; (C₄-C₆alkylene)N⁺R₁₄R₁₅R₁₆; N(R₁₃)-(C₄-C₆alkylene)NR₁₄R₁₅; N[(C₄-C₆alkylene)NR₁₄R₁₅]₂; N(R₁₃)-(C₄-C₆alkylene)N⁺R₁₄R₁₅R₁₆; N[(C₄-C₆alkylene)N⁺R₁₄R₁₅R₁₆]₂; N(R₁₃)N-R₁₄R₁₅ or N(R₁₃)N⁺R₁₄R₁₅R₁₆, wherein R₁₂ is in each case hydrogen, a cation or unsubstituted or substituted C₁-C₁₈alkyl or aryl;~~

~~R₁₃ is in each case hydrogen or unsubstituted or substituted C₁-C₁₈alkyl or aryl;~~

~~and R₁₄, R₁₅ and R₁₆ are each independently of the other(s) hydrogen or unsubstituted or substituted C₁-C₁₈alkyl or aryl, or R₁₄ and R₁₅ together with the nitrogen atom bonding them form an unsubstituted or substituted 5-, 6- or 7-membered ring which may optionally contain further heteroatoms;~~

with the proviso that

- (i) at least one of the substituents R₃, R₆ and R₉, R₄-R₁₁ contains a quaternized nitrogen atom which is not directly bonded to one of the three pyridine rings A, B or C and that
- (ii) Y is neither I⁻ nor Cl⁻ in the case that Me is Mn(II), R₃ and R₉, R₄-R₆ and R₇-R₁₁ are hydrogen and R₆, R₆ is



47-48. (cancelled).

49. (previously presented): A method according to claim 46, wherein X is CH_3CN , H_2O , F^- , Cl^- , Br^- , HOO^- , O_2^{2-} , O^{2-} , $\text{R}_{17}\text{COO}^-$, R_{17}O^- , LMeO^- or LMeOO^- wherein R_{17} is hydrogen, $-\text{SO}_3\text{C}_1\text{-C}_4\text{alkyl}$, or unsubstituted or substituted $\text{C}_1\text{-C}_{18}\text{alkyl}$ or aryl, and L and Me are as defined in claim 46.

50. (previously presented): A method according to claim 46, wherein Y is $\text{R}_{17}\text{COO}^-$, ClO_4^- , BF_4^- , PF_6^- , $\text{R}_{17}\text{SO}_3^-$, $\text{R}_{17}\text{SO}_4^-$, SO_4^{2-} , NO_3^- , F^- , Cl^- , Br^- , I^- , citrate, tartrate or oxalate, wherein R_{17} is hydrogen or unsubstituted or substituted $\text{C}_1\text{-C}_{18}\text{alkyl}$ or aryl.

51. (previously presented): A method according to claim 46, wherein n is an integer having a value of from 1 to 4.

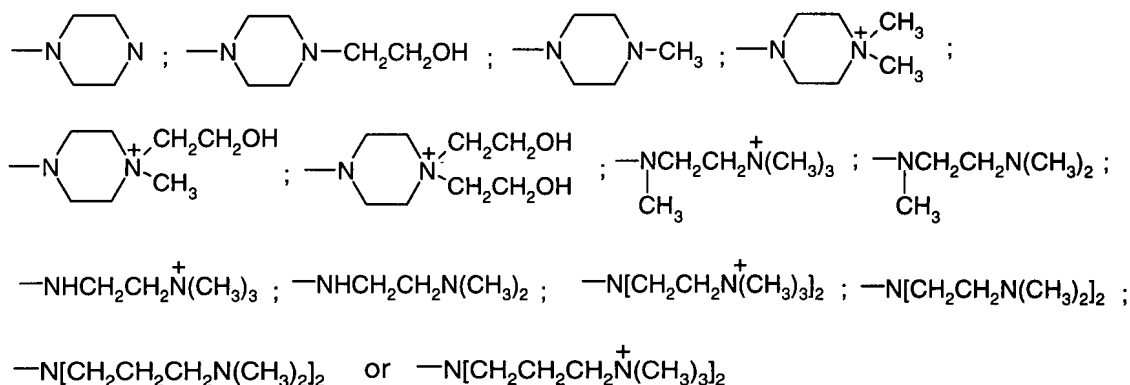
52. (previously presented): A method according to claim 46, wherein m is an integer having a value of 1 or 2.

53. (previously presented): A method according to claim 46, wherein p is an integer having a value of from 0 to 4.

54. (previously presented): A method according to claim 46, wherein z is an integer having a value of from 8- to 8+.

55-57. (cancelled).

58. (currently amended): A method according to claim ~~46~~57, wherein R_6, R_6 is



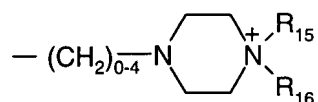
and

~~R₃' and R₉'~~~~R₄, R₂, R₃, R₄, R₆, R₇, R₈, R₉, R₁₀ and R₁₁~~ are as defined above for R₆' or are hydrogen.

59. (cancelled).

60. (currently amended): A method according to claim ~~4659~~, wherein

R'₃, R'₆ and R'₉ are each independently of the others phenyl unsubstituted or substituted by C₁-C₄alkyl, C₁-C₄alkoxy, halogen, phenyl or hydroxyl; cyano; nitro; -COOR₁₂ or -SO₃R₁₂, wherein R₁₂ is in each case hydrogen, a cation, C₁-C₄alkyl or phenyl; -SR₁₃, -SO₂R₁₃ or -OR₁₃ wherein R₁₃ is in each case hydrogen, C₁-C₄alkyl or phenyl, -N(CH₃)-NH₂ or -NH-NH₂; amino; N-mono- or N,N-di-C₁-C₄alkylamino unsubstituted or substituted by hydroxy in the alkyl moiety, wherein the nitrogen atoms which are not bonded to one of the three pyridine rings A, B or C, may be quaternized; N-mono- or N,N-di-C₁-C₄alkyl-N[⊕]R₁₄R₁₅R₁₆, unsubstituted or substituted by hydroxy in the alkyl moiety, wherein R₁₄, R₁₅ and R₁₆ are each independently of the others hydrogen, unsubstituted or hydroxyl-substituted C₁-C₁₂alkyl, or phenyl unsubstituted or substituted as indicated above, or R₁₄ and R₁₅ together with the nitrogen atom bonding them form a pyrrolidine, piperidine, morpholine or azepane ring unsubstituted or substituted by at least one C₁-C₄alkyl or by at least one unsubstituted C₁-C₄alkyl and/or substituted C₁-C₄alkyl wherein the nitrogen atom can be quaternized; N-mono- or N,N-di-C₁-C₄alkyl-NR₁₄R₁₅ unsubstituted or substituted by hydroxy in the alkyl moiety, wherein R₁₄ and R₁₅ can have the meanings indicated above; or a radical



wherein R₁₅ and R₁₆ have the meanings indicated above, and the ring may be substituted, where R'₃ and R'₉ can likewise be hydrogen.

61. (currently amended): A method according to claim ~~4659~~, wherein R₆'R₆ is hydroxy.

62. (cancelled).

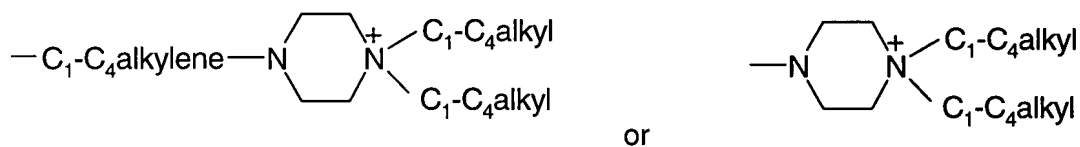
63. (currently amended): A method according to claim ~~4659~~, wherein at least one of the substituents

R'₃, R'₆ and R'₉ is one of the radicals -(C₁-C₆alkylene)-N[⊕]R₁₄R₁₅R₁₆; -N(R₁₃)-(C₁-C₆alkylene)-N[⊕]R₁₄R₁₅R₁₆;

$-\text{N}[(\text{C}_1\text{-C}_6\text{alkylene})\text{-N}^{\oplus}\text{R}_{14}\text{R}_{15}\text{R}_{16}]_2$; or $-\text{N}(\text{R}_{13})\text{-N}^{\oplus}\text{R}_{14}\text{R}_{15}\text{R}_{16}$, wherein R_{13} is in each case hydrogen, $\text{C}_1\text{-C}_4\text{alkyl}$ or phenyl and R_{14} , R_{15} and R_{16} are each independently of the others hydrogen or substituted or unsubstituted $\text{C}_1\text{-C}_{18}\text{alkyl}$ or aryl, or R_{14} and R_{15} together with the nitrogen atom bonding them form a substituted or unsubstituted 5-, 6- or 7-membered ring which may contain further heteroatoms; or $-\text{NR}_{14}\text{R}_{15}$; $-(\text{C}_1\text{-C}_6\text{alkylene})\text{-NR}_{14}\text{R}_{15}$; $-\text{N}(\text{R}_{13})\text{-(C}_1\text{-C}_6\text{alkylene})\text{-NR}_{14}\text{R}_{15}$; $-\text{N}[(\text{C}_1\text{-C}_6\text{alkylene})\text{-NR}_{14}\text{R}_{15}]_2$; or $-\text{N}(\text{R}_{13})\text{-N-R}_{14}\text{R}_{15}$, wherein R_{13} and R_{16} are as defined above and R_{14} and R_{15} together with the nitrogen atom bonding them form a 5-, 6- or 7-membered ring which is unsubstituted or substituted by at least one unsubstituted $\text{C}_1\text{-C}_4\text{alkyl}$ and/or substituted $\text{C}_1\text{-C}_4\text{alkyl}$ and may contain further heteroatoms, wherein at least one nitrogen atom which is not bonded to one of the pyridine rings A, B or C is quaternized.

64. (currently amended): A method according to claim 46, wherein at least one of the substituents R'_3 , R'_6 and $\text{R}'_9\text{-R}_{14}$ is one of the radicals $-(\text{C}_1\text{-C}_4\text{alkylene})\text{-N}^{\oplus}\text{R}_{14}\text{R}_{15}\text{R}_{16}$; $-\text{N}(\text{R}_{13})\text{-(C}_1\text{-C}_6\text{alkylene})\text{-N}^{\oplus}\text{R}_{14}\text{R}_{15}\text{R}_{16}$; $-\text{N}[(\text{C}_1\text{-C}_6\text{alkylene})\text{-N}^{\oplus}\text{R}_{14}\text{R}_{15}\text{R}_{16}]_2$; or $-\text{N}(\text{R}_{13})\text{-N}^{\oplus}\text{R}_{14}\text{R}_{15}\text{R}_{16}$, wherein R_{13} is as defined in claim 46 and R_{14} , R_{15} and R_{16} are each independently of the others hydrogen or substituted or unsubstituted $\text{C}_1\text{-C}_{12}\text{alkyl}$ or aryl, or R_{14} and R_{15} together with the nitrogen atom bonding them form a 5-, 6- or 7-membered ring which may be unsubstituted or substituted by at least one unsubstituted $\text{C}_1\text{-C}_4\text{alkyl}$ and/or substituted $\text{C}_1\text{-C}_4\text{alkyl}$ and may contain further heteroatoms; or $-\text{NR}_{14}\text{R}_{15}$; $-(\text{C}_1\text{-C}_6\text{alkylene})\text{-NR}_{14}\text{R}_{15}$; $-\text{N}(\text{R}_{13})\text{-(C}_1\text{-C}_6\text{alkylene})\text{-NR}_{14}\text{R}_{15}$; $-\text{N}[(\text{C}_1\text{-C}_6\text{alkylene})\text{-NR}_{14}\text{R}_{15}]_2$; or $-\text{N}(\text{R}_{13})\text{-N-R}_{14}\text{R}_{15}$, wherein R_{13} and R_{16} are as defined above and R_{14} and R_{15} together with the nitrogen atom bonding them form a substituted or unsubstituted 5-, 6- or 7-membered ring which may contain further heteroatoms, wherein the nitrogen atom which is not bonded to one of the pyridine rings A, B or C is quaternized.

65. (currently amended): A method according to claim 64, wherein at least one of the substituents R'_3 , R'_6 and $\text{R}'_9\text{-R}_{14}$ is one of the radicals



wherein the alkylene group is unbranched or branched and may be substituted, and wherein the alkyl groups are independently unbranched or branched and may be substituted and wherein the piperazine ring may be substituted.

66. (currently amended): A method according to claim 46, wherein a metal complex compound of formula ~~(1a)(4)~~ is used in a washing, cleaning, disinfecting or bleaching agent.
67. (currently amended): A method according to claim 66, wherein a metal complex compound of formula ~~(1a)(4)~~ is formed *in situ* in the washing, cleaning, disinfecting or bleaching agent.
68. (currently amended): A method according to claim 46, wherein a metal complex compound of formula ~~(1a)(4)~~ is used together with a peroxy compound for the bleaching of spots or stains on textile material or for the prevention of the redeposition of migrating dyes in the context of a washing process or for the cleaning of hard surfaces.
69. (currently amended): A method according to claim 46, wherein a metal complex compound of formula ~~(1a)(4)~~ is used as a catalyst for reactions with a peroxy compound for bleaching in the context of paper-making.
70. (currently amended): A method according to claim 46, wherein a metal complex compound of formula ~~(1a)(4)~~ is used as a catalyst for wastewater treatment.
- 71 (currently amended): A method according to claim 46, wherein a metal complex compound of formula ~~(1a)(4)~~ is used as a catalyst for the delignification of cellulose.
72. (currently amended): A method according to claim 46, wherein mixtures of manganese complexes of the formula ~~(1a)(4)~~ with iron complexes of the formula ~~(1a)(4)~~ are used for preventing the redeposition of migrating dyes and at the same time bleaching of spots or stains on textile material.
73. (currently amended): A method according to claim 46, wherein mixtures of manganese complexes of the formula ~~(1a)(4)~~ with iron complexes of the formula (1'), which corresponds to the formula ~~(1a)(4)~~ but contains no quaternized nitrogen atoms, are used.